Context

Recent events in Ukraine have shown that the humble landmine still represents a formidable obstacle to maneuver warfare.
Even after a conflict ends, these indiscriminate weapons continue to do harm to the civilian population.
Different techniques to detect landmines exist, but few are passive, stand-off, automated and/or efficient. At the request of BE-DEF (BAS-Transfo-MILENG) we propose a study where we will analyze which parts of the visible and infrared (VIR) spectrum are best suited to detect landmines .

Objective

- Create high resolution annotated spatio-spectral-temporal data sets of (simulated) minefields in lab settings, under different parameter settings.

- Apply different anomaly and target-detection algorithms on spectral subsets of these data and analyze the performance of these algorithms.

- Analyze which parts of the VIS/IR spectrum would be sufficient to detect mines with a performance that is sufficient for real-time use in an operational scenario.

DFR DAP/25-07: MinDec-VIR
Land-Mine Detection using Visible and Infrared Imaging

Methodology

Through real observations and analysis of the performance of detection algorithms, develop a large database of HSI measurements that allows the identification of the minimum spectral bandwidth that allows acceptable detection of landmines in real time.

Who

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Promotor (MWMW)

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To be recruited
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